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ABSTRACT

Research documenting links between levels of education and health outcomes suggests people with higher educational attainment may have a health advantage. Health literacy issues that go beyond basic skills include health information communication; literacy and health as cultural and social practices; a relationship among health information, literacy, and behavior; and impact of the Internet on use of health information. First, the medical literature emphasizes simplification of health materials. Physicians should use language the general public readily understands. Second, health literacy depends on context, and individuals' cultural world views and social practices must be taken into account in determining their level of health literacy. Third, these factors in addition to health knowledge and health literacy affect adoption of health behavior: perception of risk, self-efficacy beliefs, physical environment, and perceived costs and benefits. Fourth, Internet users tend to have higher literacy levels and better access to the vast amounts of health information available online that can empower consumers to participate actively in their health care and challenge the decisions of health care and insurance providers. Components of an effective health literacy system are an information dissemination system with readable, culturally sensitive materials; coordinated health literacy learning system; measurement and assessment system; formal and informal health advice system; and professional health provider learning system. (Contains 20 references.) (YLB)

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Health Literacy beyond Basic Skills

The relationship between health and literacy is often discussed in terms of the health-related problems that may be associated with low literacy. However, health literacy is an issue that spans education and age levels. This Digest looks beyond adult basic education to address issues of health and literacy for all adults and educational responses to them.

In contemporary society, a constellation of changes has complicated the adult's challenge of being healthy: the health care system's shift from a paternalist to a partnership model, with more individual responsibility for prevention, informed decision making, and consent; complex choices about insurance; the need for self-management of chronic conditions such as diabetes and high blood pressure; and responsibility for both children's and elders' health care. Adults at all literacy levels must cope with conflicting media reports about environmental health hazards, diet and nutrition, the safety of hormone replacement therapy, and the appropriate frequency of screening tests; myths and misconceptions about communicable diseases such as smallpox, anthrax, and SARS; pharmaceutical company advertising about new drugs; and the vast amounts of health information available on the Internet.

Health literacy is defined as the capacity to obtain, interpret, understand, and use information to promote and maintain health (Greenberg 2001; Shohet 2002). Health consumers must be able to evaluate information for credibility and quality, analyze relative risks and benefits, calculate dosages, interpret test results, and locate health information, tasks that may require visual, computer, information, and computational literacy (Sullivan 2000). Nutbeam's model (1999) depicts three levels of health literacy that encompass the skills and abilities in these definitions: (1) **functional health literacy**—basic reading and writing skills to understand and follow simple health messages; (2) **interactive health literacy**—more advanced literacy, cognitive, and interpersonal skills to manage health in partnership with professionals; and (3) **critical health literacy**—ability to analyze information critically, increase awareness, and participate in action to address barriers.

Research documenting links between levels of education and health outcomes (Hammond 2002; Wilson 2001) suggests that people with higher educational attainment may have a health advantage. However, health literacy is not identical to general literacy (Davis et al. 2002). Health literacy issues that go beyond basic skills include (1) health information communication; (2) literacy and health as cultural and social practices; (3) the relationship among health information, literacy, and behavior; and (4) the impact of the Internet on the use of health information.

Communication of Health Information

Numerous studies have demonstrated that many written health materials such as pamphlets, self-care instructions, and insurance forms require a high reading level (Davis et al. 2002). Greenberg (2001) cites a study showing that even college-educated individuals have difficulty understanding information on the benefits and risks of mammography. The medical literature has emphasized simplification, or plain language, and the use of visual aids and pictographs for low-literacy patients, although Greenberg suggests that all patients would benefit from easy-to-understand directions. However, many writers caution against overreliance on plain language. McConnell-Imbriotis' (2001) analysis of literature for diabetes patients shows that simplification can impede learning even for highly literate people if no context for unfamiliar concepts is provided; brevity can lead to the use of narrow, ethnocentric examples and oversimplification of critical information. Multiple factors beyond readability and presentation may influence consumer use of health information, including patients' demographic characteristics, health locus of control, and beliefs and environmental factors (Koo, Krass, and Aslani 2003). Plain language is useful but not the primary solution: written communication should supplement physician-patient conversations (Shohet 2002). The problem is that physicians often use language not readily understood by the general public. Even when physicians think they are using "everyday" language, patients do not perceive it as such (Davis et al. 2002). Freebody and Freiberg (1997) discuss the role that expert knowledge and the protection of a professional elite play in the opacity of health care communication. They urge recognition of both literacy and health as sets of cultural practices, as well as understanding of the ways in which communication patterns act to position people with respect to knowledge and medical care.

Literacy and Health as Cultural and Social Practices

Research on health and literacy often categorizes people demographically (e.g., geographic location, income, ethnicity, age, literacy level) and attaches health risk variables to these categories. According to Freebody and Freiberg (1997) this limited discourse ignores the literacy practices of diverse groups. Greenberg (2001) points out how basic definitions of health literacy fail to recognize the role of cultural belief systems and social norms. Health literacy in one language/culture may not transfer to another (Wilson 2001). The cultural expectations of the U.S. health-care system may clash with those of the patient; there may be tensions between the system's emphasis on individual care and a cultural view of health as a collective responsibility (Robinson and Gilmartin 2002). Miscommunication may occur because of different meanings of words and phrases to express health problems by speakers of other languages (ibid.). In Davis and Flannery's (2001) study, Puerto Rican women found health information trustworthy when its sources were compatible with cultural beliefs and values. Kakai et al. (2003) observed different patterns of health information sources among Caucasian, Japanese, and Pacific Islander cancer patients; ethnicity overrode educational level in shaping their choices of health information. Key social relationships enabled the health of lower-educated men to parallel that of men with higher education (Antonucci et al. 2003), suggesting that social networks and practices could moderate the effects of low literacy on health. These findings indicate that health literacy depends on context, and individuals' cultural world views and social practices must be taken into account in determining their level of health literacy.

Health Information, Literacy, and Behavior

The effect of context on health literacy is also seen in examining its relationship with health behavior. People who are highly literate in other situations may have difficulty dealing with health information when they are ill and coping with the associated emotional trauma and stress (Freebody and Freiberg 1997; Wilson 2001). Highly literate individuals can become low-literate patients because of cognitive or physical disabilities such as visual impairment. Age can be a compounding factor. Older adults experience more chronic illness and must learn more new medical information and procedures (Brown and Park 2002). When Brown and Park compared older and younger adults' recall of new information on familiar and unfamiliar diseases, both groups learned more about the unfamiliar, suggesting that prior knowledge may hinder learning of new information on the same topic. The older group consistently learned less regardless of familiarity. When Benson and Forman (2002) gave the Test of Functional Health Literacy to 93 affluent, well-educated older adults, 30% had poor comprehension of written health information, especially informed-consent forms and numeracy-related questions such as blood sugar numbers. They concluded that comprehension problems may reflect age-related difficulty with the skills required for health literacy.

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Other studies show that "high literacy levels are no guarantee that a person will respond in a desired way to health education and communication activities" (Nutbeam 1999, p. 52). Most of the college-educated people surveyed by Ludwig and Turner (2002) overestimated industrial radiation risks and underestimated medical radiation risks. In a survey of 400 adults (77% college educated), 55% were unaware of the Dietary Guidelines for Americans and many misinterpreted and misapplied these ambiguously written standards (Keenan, AbuSabha, and Robinson 2002). Factors besides health knowledge and health literacy affect the adoption of health behavior: perception of risk, self-efficacy beliefs, physical environment, and perceived costs and benefits (Gordon 2002).

Health Information on the Internet

The Internet is another context in which health literacy is critical. Internet users tend to have higher literacy levels and better access to the vast amounts of health information available online, and this information can empower consumers to participate actively in their health care and challenge the decisions of health-care and insurance providers. In addition, critical literacy is crucial because of concerns about reliability and accuracy, access to information lay persons may lack the background to interpret, and the potential dangers of self-diagnosis and treatment. Internet users interviewed by Eysenbach and Köhler (2002) recognized ways to assess the credibility of websites, but in an observational study, none of them used these criteria to verify health information. A Harris Poll (http://www.harrisinteractive.com/news/newsletters_healthcare.asp) found that 93% of Americans surveyed trusted online health information, 85% found it easy to understand, and 82% judged it to have good quality. For both high- and low-literate individuals, critical "cyberliteracy" is necessary for effective and safe use of Internet-based health information. Projects such as MedCIRCLE—the Collaborative for Internet Rating, Certification, Labeling, and Evaluation of Health Information (www.medcircle.org) and the Health on the Net Foundation (www.hon.ch/) can help educate consumers of online health information.

Improving Health Literacy

The research discussed here indicates that high levels of literacy in one context do not automatically transfer to other contexts. Factors such as the complex and changing health-care environment; the way health information is communicated in print, online, and interpersonally; the effects of the intersecting cultures and practices of the health profession, the individual, and the dominant society; and the gap between knowledge/information and behavior suggest a need to increase the health literacy skills of *all* adults as well as the communication skills of the health profession. How can adult educators respond?

Based on the work of the Massachusetts System for Adult Basic Education Support, components of an effective health literacy system that involves many levels of educational, health-care, and community service providers have been identified (Wilson 2001): (1) an information dissemination system providing materials that are readable, comprehensible, trustworthy, and culturally sensitive; (2) a coordinated health literacy learning system; (3) a measurement and assessment system; (4) a formal and informal health advice system, including a hotline, handbook, and online support; and (5) a professional health provider learning system. Recommendations for using effective adult learning principles in health literacy development include the following (McConnell-Imbriotis 2001; Shohet 2002; Wilson 2001):

- Link learning to adults' prior health consumer experiences. It should meet the needs of broad cultural, economic, and social groups; encompass a variety of learning styles; and be specifically targeted to client concerns and learning goals.
- Provide literacy learning experiences that are contextual and experiential.
- Involve adults in planning their own health literacy learning by using participatory approaches linked to individual and community empowerment.

Freebody and Freiberg (1997) characterize literacy as both critical, purposeful, accurate management of print, visual, and other information and as cultural savvy—reading the world. In order to help adults reach the functional, interactive, and critical health literacy levels envisioned by Nutbeam (1999), health literacy should move beyond a focus on basic skills toward individual and communal efficacy for change.

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